

Hydric Soils

Sibley County, Minnesota

[This report lists only those map unit components that are rated as hydric. Dashes (---) in any column indicate that the data were not included in the database. Definitions of hydric criteria codes are included at the end of the report]

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
5B:					
Dakota loam, 1 to 6 percent slopes	Dakota	90	Hills, Stream terraces	No	---
	Terril	7	---	No	---
	Biscay	3	Depressions	Yes	2B3
27B:					
Dickinson loam, 2 to 6 percent slopes	Dickinson	90	Hills, Stream terraces	No	---
	Lester	10	Moraines	No	---
35:					
Blue Earth mucky silt loam	Blue Earth	90	Lakebeds (relict), Moraines	Yes	2B3, 3
	Canisteo	5	Rims	Yes	2B3
	Harps	5	Rims	Yes	2B3
86:					
Canisteo clay loam	Canisteo	90	Depressions, Flats, Moraines, Rims	Yes	2B3
	Glencoe	5	Depressions	Yes	2B3, 3
	Crippen	3	Rises	No	---
	Klossner	2	Depressions	Yes	1, 3
94B:					
Terril loam, 2 to 6 percent slopes	Terril	90	Moraines, Stream terraces	No	---
	Delft	10	Drainageways	Yes	2B3
102B:					
Clarion loam, 2 to 6 percent slopes	Clarion	90	Hills, Moraines	No	---
	Nicollet	5	Moraines	No	---
	Webster	5	Drainageways	Yes	2B3

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106B: Lester loam, 2 to 6 percent slopes	Lester	90	Hills, Moraines	No	---
	Cordova	5	Drainageways	Yes	2B3
	Le Sueur	5	Moraines	No	---
106C2: Lester loam, 6 to 12 percent slopes, eroded	Lester, eroded	85	Hills, Moraines	No	---
	Delft	5	Drainageways	Yes	2B3
	Terril	5	Moraines	No	---
	Cordova	3	Drainageways	Yes	2B3
	Le Sueur	2	Moraines	No	---
109: Cordova clay loam	Cordova	90	Flats, Moraines	Yes	2B3
	Glencoe	5	Depressions	Yes	2B3, 3
	Le Sueur	5	Rises	No	---
110: Marna silty clay loam	Marna	90	Flats, Moraines	Yes	2B3
	Glencoe	5	Depressions	Yes	2B3, 3
	Klossner	3	Depressions	Yes	1, 3
	Nicollet	2	Rises	No	---
112: Harps clay loam	Harps	90	Depressions, Moraines, Rims	Yes	2B3
	Glencoe	5	Depressions	Yes	2B3, 3
	Klossner	3	Depressions	Yes	1, 3
	Crippen	2	Rises	No	---

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113: Webster clay loam	Webster	90	Flats, Moraines	Yes	2B3
	Glencoe	5	Depressions	Yes	2B3, 3
	Nicollet	3	Rises	No	---
	Clarion	2	Moraines	No	---
114: Glencoe clay loam	Glencoe	90	Depressions, Moraines	Yes	1, 3
	Canisteo	5	Rims	Yes	2B3
	Harps	3	Rims	Yes	2B3
	Klossner	2	Depressions	Yes	1, 3
118: Crippin loam	Crippin	90	Moraines, Rises	No	---
	Canisteo	5	Rims	Yes	2B3
	Clarion	3	Moraines	No	---
	Harps	2	Rims	Yes	2B3
130: Nicollet clay loam	Nicollet	90	Rises	No	---
	Webster	5	Drainageways	Yes	2B3
	Clarion	3	Moraines	No	---
	Canisteo	2	Rims	Yes	2B3
134: Okoboji silty clay loam	Okoboji	90	Depressions, Moraines	Yes	2B3, 3
	Canisteo	5	Rims	Yes	2B3
	Harps	3	Rims	Yes	2B3
	Klossner	2	Depressions	Yes	1, 3

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222B: Lasa loamy fine sand, 2 to 8 percent slopes	Lasa	90	Stream terraces	No	---
	Dakota	10	Terraces	No	---
239: Le Sueur clay loam	Le Sueur	90	Moraines, Rises	No	---
	Cordova	5	Drainageways	Yes	2B3
	Rolfe	3	Depressions	Yes	2B3, 3
	Canisteo	2	Rims	Yes	2B3
317: Oshawa silty clay loam, frequently flooded	Oshawa, frequently flooded	90	Flood plains	Yes	2B3, 3, 4
	Chaska	5	Flood plains	No	---
	Minneiska	5	Flood plains	No	---
329: Chaska loam, occasionally flooded	Chaska, occasionally flooded	90	Flats, Flood plains	No	---
	Minneiska	5	Flood plains	No	---
	Oshawa	5	Flood plains	Yes	2B3, 3, 4
336: Delft clay loam	Delft	90	Drainageways, Moraines	Yes	2B3
	Clarion	4	Moraines	No	---
	Lester	3	Moraines	No	---
	Storden	3	Moraines	No	---

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386:					
Okoboji mucky silty clay loam	Okoboji	90	Depressions, Moraines	Yes	2B3, 3
	Klossner	5	Depressions	Yes	1, 3
	Harps	3	Rims	Yes	2B3
	Canisteo	2	Rims	Yes	2B3
463B:					
Minneiska loam, 1 to 4 percent slopes	Minneiska	90	Alluvial fans	No	---
	Terril	5	Moraines	No	---
	Chaska	3	Flood plains	No	---
	Coland	2	Flood plains	Yes	2B3
525:					
Muskego muck	Muskego	90	Depressions, Moraines	Yes	1, 3
	Klossner	5	Depressions	Yes	1, 3
	Harps	3	Rims	Yes	2B3
	Canisteo	2	Rims	Yes	2B3
539:					
Klossner muck	Klossner	90	Depressions, Moraines	Yes	1, 3
	Glencoe	5	Depressions	Yes	2B3, 3
	Harps	3	Rims	Yes	2B3
	Canisteo	2	Rims	Yes	2B3
743:					
Glencoe clay loam, stratified substratum	Glencoe, stratified substratum	90	Depressions, Moraines	Yes	2B3, 3
	Glencoe	5	Depressions	Yes	2B3, 3
	Mayer	3	Rims	Yes	2B3
	Canisteo	2	Rims	Yes	2B3

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772F:					
Swanlake-Lasa complex, 18 to 65 percent slopes	Swanlake	55	Hills, Moraines	No	---
	Lasa	35	Hills, Moraines	No	---
	Delft	10	Drainageways	Yes	2B3
887B:					
Clarion-Swanlake complex, 3 to 6 percent slopes	Clarion	60	Hills, Moraines	No	---
	Swanlake	30	Hills, Moraines	No	---
	Nicollet	5	Moraines	No	---
	Webster	5	Drainageways	Yes	2B3
919:					
Canisteo-Mayer complex	Canisteo	50	Depressions, Flats, Moraines, Rims	Yes	2B3
	Mayer	40	Flats, Moraines	Yes	2B3
	Glencoe	5	Depressions	Yes	2B3, 3
	Nicollet	5	Rises	No	---
920B:					
Clarion-Hawick complex, 3 to 6 percent slopes	Clarion	55	Hills, Moraines	No	---
	Hawick	35	Hills, Moraines	No	---
	Nicollet	5	Moraines	No	---
	Webster	5	Drainageways	Yes	2B3

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920C2:					
Clarion-Hawick-Storden complex, 6 to 12 percent slopes, eroded	Clarion, eroded	35	Hills, Moraines	No	---
	Hawick, eroded	30	Hills, Moraines	No	---
	Storden, eroded	25	Hills, Moraines	No	---
	Terril	5	Moraines	No	---
	Delft	3	Drainageways	Yes	2B3
	Nicollet	2	Moraines	No	---
921C2:					
Clarion-Storden complex, 6 to 12 percent slopes, eroded	Clarion, eroded	55	Hills, Moraines	No	---
	Storden, eroded	35	Hills, Moraines	No	---
	Terril	5	Moraines	No	---
	Delft	3	Drainageways	Yes	2B3
	Nicollet	2	Moraines	No	---
944B:					
Lester-Hawick complex, 2 to 6 percent slopes	Lester	55	Hills, Moraines	No	---
	Hawick	35	Hills, Moraines	No	---
	Cordova	5	Drainageways	Yes	2B3
	Le Sueur	5	Moraines	No	---
944C2:					
Lester-Hawick-Swanlake complex, 6 to 12 percent slopes, eroded	Lester, eroded	45	Hills, Moraines	No	---
	Hawick, eroded	30	Hills, Moraines	No	---
	Swanlake, eroded	15	Hills, Moraines	No	---
	Terril	5	Moraines	No	---
	Delft	3	Drainageways	Yes	2B3
	Le Sueur	2	Moraines	No	---

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945D2:					
Lester-Storden complex, 12 to 18 percent slopes, eroded	Lester, eroded	55	Hills, Moraines	No	---
	Storden, eroded	35	Hills, Moraines	No	---
	Delft	5	Drainageways	Yes	2B3
	Terril	3	Moraines	No	---
	Le Sueur	2	Moraines	No	---
945F:					
Lester-Storden complex, 18 to 65 percent slopes	Lester	70	Hills, Moraines	No	---
	Storden	20	Hills, Moraines	No	---
	Delft	5	Drainageways	Yes	2B3
	Terril	5	Moraines	No	---
946:					
Nicollet-Linder complex	Nicollet	55	Moraines, Rises	No	---
	Linder	35	Flats, Moraines	No	---
	Biscay	5	Drainageways	Yes	2B3
	Webster	5	Drainageways	Yes	2B3
956:					
Canisteo-Glencoe complex	Canisteo	60	Depressions, Flats, Moraines, Rims	Yes	2B3
	Glencoe	30	Depressions, Moraines	Yes	2B3, 3
	Crippen	10	Rises	No	---
978:					
Cordova-Rolfe complex	Cordova	75	Flats, Moraines	Yes	2B3
	Rolfe	20	Depressions, Moraines	Yes	2B3, 3
	Le Sueur	5	Moraines	No	---
1016:					
Udorthents, loamy	Udorthents, loamy	100	Moraines	No	---

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1030: Udorthents-Pits, gravel, complex	Udorthents	50	Moraines, Stream terraces		---
	Pits, gravel	40	Moraines, Stream terraces		---
	Biscay	10	Depressions	Yes	2B3, 3
1075: Klossner and Muskego soils, ponded	Klossner, ponded	45	Depressions, Moraines	Yes	1, 3
	Muskego, ponded	45	Depressions, Moraines	Yes	1, 3
	Canisteo	5	Rims	Yes	2B3
	Harps	5	Rims	Yes	2B3
1081: Minneiska-Abscota complex, occasionally flooded	Minneiska, occasionally flooded	70	Flats, Flood plains	No	---
	Abscota, occasionally flooded	20	Flats, Flood plains	No	---
	Oshawa	5	Flood plains	Yes	2B3, 3, 4
	Chaska	3	Flood plains	No	---
	Kalmarville	2	Flood plains	Yes	2B3
1093: Webster-Biscay complex	Webster	55	Flats, Moraines	Yes	2B3
	Biscay	40	Flats, Moraines	Yes	2B3
	Glencoe	3	Depressions	Yes	2B3, 3
	Nicollet	2	Rises	No	---
1356: Water, miscellaneous	Water, miscellaneous	100	---		---

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1833: Coland clay loam, occasionally flooded	Coland, occasionally flooded	90	Flats, Flood plains	Yes	2B3
	Minneiska	5	Flood plains	No	---
	Oshawa	5	Flood plains	Yes	2B3, 3, 4
1834: Coland clay loam, frequently flooded	Coland, frequently flooded	90	Flats, Flood plains	Yes	2B3
	Minneiska	5	Flood plains	No	---
	Oshawa	5	Flood plains	Yes	2B3, 3, 4
1901B: Lester-Le Sueur complex, 1 to 6 percent slopes	Lester	50	Hills, Moraines	No	---
	Le Sueur	40	Flats, Moraines	No	---
	Cordova	10	Drainageways	Yes	2B3
1999: Minneiska-Kalmarville complex, frequently flooded	Minneiska, frequently flooded	55	Flats, Flood plains	No	---
	Kalmarville, frequently flooded	35	Channels, Flood plains	Yes	2B3
	Chaska	5	Flood plains	No	---
	Oshawa	5	Flood plains	Yes	2B3, 3, 4
L13A: Klossner muck, depressional, 0 to 1 percent slopes	Klossner, drained	80	Depressions, Moraines	Yes	1
	Mineral soil, drained	15	Depressions, Moraines	Yes	2B3
	Houghton, drained	5	Depressions, Moraines	Yes	1

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L83A: Webster clay loam, 0 to 2 percent slopes	Webster	65	Flats, Moraines, Swales	Yes	2B3
	Glencoe, depressional	14	Depressions, Moraines	Yes	2B3, 3
	Canisteo	8	Depressions, Flats, Moraines, Rims	Yes	2B3
	Nicollet	8	Flats, Moraines, Rises	No	---
	Poorly drained soil	5	Flats, Moraines, Swales	Yes	2B3
L84A: Glencoe clay loam, depressional, 0 to 1 percent slopes	Glencoe, depressional	80	Depressions, Moraines	Yes	2B3, 3
	Very poorly drained muck	10	Depressions, Moraines	Yes	2B3
	Canisteo	5	Depressions, Flats, Moraines, Rims	Yes	2B3
	Harps	5	Depressions, Rims	Yes	2B3
L85A: Nicollet clay loam, 1 to 3 percent slopes	Nicollet	85	Flats, Moraines, Rises	No	---
	Clarion	10	Hills, Moraines	No	---
	Webster	5	Flats, Moraines, Swales	Yes	2B3
L107A: Canisteo-Glencoe, depressional complex, 0 to 2 percent slopes	Canisteo	50	Moraines, Rims	Yes	2B3
	Glencoe, depressional	35	Depressions, Moraines	Yes	2B3, 3
	Harps	8	Moraines, Rims	Yes	2B3
	Canisteo, depressional	3	Depressions, Moraines	Yes	2B3
	Crippin	2	Flats, Moraines, Rises	No	---
	Jeffers, friable	2	Depressions, Flats, Moraines, Rims	Yes	2B3

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L163A: Okoboji silty clay loam, depressional, 0 to 1 percent slopes	Okoboji, depressional	92	Lake plains, Moraines	Yes	2B3
	Canisteo	2	Depressions, Flats, Moraines, Rims	Yes	2B3
	Harpster	2	Lake plains	Yes	2B3
	Knoke, depressional	2	Lake plains	Yes	2B3
	Prinsburg	2	Depressions, Flats, Lake plains, Moraines, Rims	Yes	2B3
W: Water	Water	100	---		---

Hydric Soils

This table lists the map unit components that are rated as hydric soils in the survey area. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (National Research Council, 1995; Hurt and others, 2002).

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others, 1979; U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for all of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). These soils, under natural conditions, are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2003) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and others, 2002).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

Map units that are dominantly made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units dominantly made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform.

The criteria for hydric soils are represented by codes in the table (for example, 2B3). Definitions for the codes are as follows:

1. All Histels except for Folistels, and Histosols except for Folists.
2. Soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, Pachic subgroups, or Cumulic subgroups that:
 - A. are somewhat poorly drained and have a water table at the surface (0.0 feet) during the growing season, or
 - B. are poorly drained or very poorly drained and have either:
 - 1) a water table at the surface (0.0 feet) during the growing season if textures are coarse sand, sand, or fine sand in all layers within a depth of 20 inches, or
 - 2) a water table at a depth of 0.5 foot or less during the growing season if permeability is equal to or greater than 6.0 in/hr in all layers within a depth of 20 inches, or
 - 3) a water table at a depth of 1.0 foot or less during the growing season if permeability is less than 6.0 in/hr in any layer within a depth of 20 inches.
3. Soils that are frequently ponded for long or very long duration during the growing season.
4. Soils that are frequently flooded for long or very long duration during the growing season.

References:

- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.
- Federal Register. September 18, 2002. Hydric soils of the United States.
- Federal Register. July 13, 1994. Changes in hydric soils of the United States.
- Hurt, G.W., P.M. Whited, and R.F. Pringle, editors. Version 5.0, 2002. Field indicators of hydric soils in the United States.
- National Research Council. 1995. Wetlands: Characteristics and boundaries.
- Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.
- Soil Survey Staff. 2003. Keys to soil taxonomy. 9th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.
- Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.
- Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.
- United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.